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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,774	07/20/2004	Yasuhiro Sakurai	042593	4439

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EXAMINER	
GOODLEY, JAMES E	
ART UNIT	PAPER NUMBER
2817	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,774	SAKURAI, YASUHIRO	
	Examiner	Art Unit	
	James E. Goodley	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-12 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9-12 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 7/14/2006 have been fully considered and are persuasive.

In view of the amendment to claim 1, it appears that Pucci no longer discloses or suggests the claimed invention, due to, "...fixing the capacitance value of said oscillation capacitor to a predetermined constant capacitance value *independent of temperature* when disabling..." However, as necessitated by the amendment, ***Oka (6,366,175)*** is applied as prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 6, 9, 11, 12, 14-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by ***Oka (6,366,175).***

Regarding **claims 1, 4, 6, 9, 11, 12, 14-18 and 20**, columns 14-17 and Fig. 9 of Oka '175 discloses a temperature compensated oscillator, comprising:

an oscillation circuit [28] whose oscillation frequency varies with a temperature change;

an output line [OUT] for outputting a signal based on an oscillation output of said oscillation circuit;

a temperature detection circuit [sensor 11A of Fig. 16 in the prior art – see lines 48-67 of column 1 and lines 44-59 of column 10 in the first and subsequent embodiments] for detecting a temperature state near said oscillation circuit (and storing compensation data in memory block 11C); and

a temperature compensation circuit [21] for keeping a frequency of the signal outputted to said output line substantially constant based on an output from said temperature detection circuit (via temperature compensation voltage Vc1 to the oscillation circuit – see lines 44-59 of column 10 in the first and subsequent embodiments); and

a selection means [switch SW1 controlled by power control circuit 26 via external control input STBY to change between power modes] for selecting whether to enable or disable a temperature compensation function (see lines 7-58 of column 15);

wherein said oscillation circuit has an oscillation capacitor [varactor Cv]; and

said selection means has a selection circuit [power control circuit 26] for allowing said temperature compensation circuit to vary a capacitance value via voltage-controllable varactor Cv of said oscillation capacitor depending on a temperature detected by said temperature detection circuit when enabling said temperature compensation function (when SW1 is ON – see lines 16-41 of column 16), and for fixing

the capacitance value of said oscillation capacitor to a predetermined constant capacitance value [value Vc1 determined by the track and hold circuit 22] independent of the temperature (temperature compensation circuit 21 stops operating) when disabling said temperature compensation function (when SW1 is set to OFF - see specifically lines 4-26 of column 17 for the disabling of the temp function).

Switch SW1 is provided to either enable or disable said temperature compensation function. When the STBY is set low, the capacitance value is inhibited from being set to the predetermined hold value.

The power control circuit 26, memory block 11C and track and hold circuit 22, together function as a selection information storage circuit, which enable or disable the temperature function based on the STBY signal. Fig. 8 shows a multi-bit implantation of the switch SW1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pucci in view of ***Gillig et al (of record)***.

Regarding **claim 2**, Oka discloses the temperature compensated oscillator according to claim 1 except, "further comprising:

a variable frequency division circuit between said oscillation circuit and said output line,

wherein said selection means has means for allowing said temperature compensation circuit to vary a frequency division ratio of said variable frequency division circuit depending on a temperature detected by said temperature detection circuit when enabling the temperature compensation function of said temperature compensation circuit, and fixing the frequency division ratio of said variable frequency division circuit to a predetermined value when disabling the temperature compensation function."

However, Fig. 4 and the abstract of Gillig shows a temperature compensated oscillator which has a frequency varying with temperature comprising: a temperature detection circuit [72] driving a temperature compensation controller [70] to vary a frequency division ratio [÷J - 48] of a variable frequency division circuit depending on a temperature detected by said temperature detection circuit when enabling the temperature compensation function of said temperature compensation circuit (when temperature varies enough to require altering the division ratio according to temperature compensation values stored in memory 74), and fixing the frequency division ratio of said variable frequency division circuit to a predetermined value when disabling the temperature compensation function (when temperature is very close to room conditions and hence needs no compensation).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oka by the device of Gillig by controlling the

phase-locked loop dividing ratios via the programming interface of Oka for the purpose of being able to control both capacitance switching and divider control, therefore have greater temperature compensation ability.

Regarding **claim 10**, the device of Oka in view of Gillig discloses the temperature compensated oscillator according to claim 2 (with reference to Oka), further comprising:

Switch SW1 is provided to either enable or disable said temperature compensation function.

The power control circuit 26, compensation data memory block 11C and track and hold circuit 22, together function as a selection information storage circuit which enable or disable the temperature function based on the STBY signal. Fig. 8 shows a multi-bit implantation of the switch SW1.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of ***Cole et al (of record)***.

Regarding **claim 5**, Oka suggests but does not specifically disclose the device of claim 3, "where said oscillation capacitor includes a plurality of fixed capacitors and said temperature compensation circuit has means for changing connection states of the plurality of fixed capacitors to change the capacitance value of said oscillation capacitor."

However, Figs. 1 and 7 of Cole disclose the art-recognized equivalency of using fixed capacitors [72] controlled by switching transistors [74] instead of varactors.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oka by the device of Cole by utilizing a plurality of fixed capacitors instead of varactors for the purpose of easier controllability and programming of the capacitive temperature compensation function.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of ***Wojewoda et al (of record)***.

Regarding **claim 7**, Oka shows the temperature compensated oscillator of claim 3 except, "wherein said oscillation capacitor includes a variable capacitor which varies in capacitive value in accordance with a voltage applied thereto, and said temperature compensation circuit has means for changing the voltage applied to the variable capacitor to change the capacitance value of said oscillation capacitor by separating the variable capacitor from the oscillator when fixing the capacitance value to the predetermined value".

However, lines 63-67 of column 3, lines 1-25 of column 4 and Fig. 2 of Wojewoda show temperature detection [34] and compensation circuits [30] which apply a correction voltage to varactors 68 to vary capacitance of the oscillator circuit and to switch in an out said varactors via an external signal [64].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oka by the device of Wojewoda by including a voltage variable capacitance instead of switching in and out an array of

discrete capacitors for the purpose of obtaining a more finely tuned temperature compensation circuit.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of ***Shibuya et al (of record)***.

Regarding claim 16, Oka suggests but does not specifically disclose the device of claim 3 wherein, "said means for fixing said oscillation capacitor to the predetermined capacitance value is a constant voltage generation circuit."

However, Fig. 1 and line 29 of column 13 – line 52 of column 14 of Shibuya discloses a temperature compensated crystal oscillator very similar to that of Oka in which a constant voltage generation circuit [12] is utilized in the temperature compensation based on data from the ROM/RAM circuit [16].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oka by including a constant voltage generation circuit disclosed by Shibuya in the temperature compensation block 18 of Oka for the purpose of allowing plural temperature compensation parameters to be adjusted (see lines 6-15 of column 15 in Shibuya).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over ***Oka***

Regarding **claim 19**, the device of Oka shows the temperature compensated oscillator circuit of claim 17 and suggests but does not specifically disclose, "wherein said selection information storage circuit is composed of a conductive pattern and

enables the temperature compensation function of said temperature compensation circuit caused by the conductive pattern being switched off.

However, it is inherent that the memory circuit of Oka has an array of storage cells of a predetermined conductive pattern. It is also well-known to include one or more fuses or like devices which can cut-out based on a threshold voltage or other environmental condition (such as temperature) and will therefore alter which memory address is being accessed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oka by including a predetermined conductive pattern which stores information for controlling a selection state when said conductive pattern is switched off for the purpose of accessing desired stored information when a fault condition, such as a detected voltage above some threshold, has occurred.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. Goodley whose telephone number is 571-272-8598. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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